SEQUENZPROTOKOLL

```
<110> Firma Biofrontera GmbH
<120> Transgenic animal model for neurodegenerative diseases
<130> 5807EPAlleSequenzen
<140>
<141>
<160> 34
<170> PatentIn Ver. 2.1
<210> 1
<211> 3255
<212> DNA
<213> mouse
<400> 1
ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60
aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaeeegee 120
eggtgaccat gatagtgttt gteaggttea acteeageta tggetteeca gtggaggteg 180
attetgacae cageatettg cageteaagg aagtggttge taagegacag ggggttecag 240
ctgaccaget gegtgtgatt tttgccggga aggagettee gaatcacetg aeggttcaaa 300
actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagtc 360
atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420
agtccaggag cttgacacga gtggacctga gcagccatac cctgccggtg gactctgtgg 480
ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540
ttaaacccac ctacaacage tttttcatct actgcaaagg cccctgccac aaggtccage 600
ctggaaagct ccgagttcag tgtggcacct gcaaacaagc aaccctcacc ttggcccagg 660
geccatettg etgggaegat gtettaatte caaaceggat gagtggtgag tgccagtete 720
cagactgeee tggaaccaga getgaatttt tetttaaatg tggagcacae ecaaceteag 780
acaaggacac gteggtaget ttgaacetga teaccageaa caggegeage atecettgea 840
tagegtgeac agatgteagg agecetgtee tggtetteea gtgtaaceae egteaegtga 900
tetgtttgga etgttteeae ttgtattgtg teacaagaet caacgategg cagtttgtee 960
acgatgetea aettggetae teeetgeegt gtgtagetgg etgteeeaae teeetgatta 1020
aagageteea teaetteagg ateettggag aagageagta cactaggtae cageagtatg 1080
gggccgagga atgcgtgctg caaatgggag gtgtgctgtg cccccgtcct ggctgtggag 1140
ctggactgct acctgaacag ggccagagga aagtcacctg cgaagggggc aacggcctgg 1200
gctgcgggtt tgttttctgc cgggactgta aggaagcata ccatgaaggg gattgcgact 1260
cactgetega acceteagga gecaettete aggeetacag ggtggacaaa agageegetg 1320
agcaageteg etgggaggag geetecaagg aaaccatcaa gaagaccace aagcettgte 1380
ctcgctgcaa cgtgccaatt gaaaaaacg gaggatgtat gcacatgaag tgtcctcagc 1440
cccagtgcaa gctggagtgg tgctggaact gtggctgtga gtggaaccga gcctgcatgg 1500
gagateactg gtttgaegtg tagagagaga tgteacttgg eeetggaege acaaceteaa 1560
gggaaactcc gaagattcct accttcctta gccatttctt cttctcgatg catataagca 1620
```

cataaatgeg	cacacacaa	cacaggetge	agattacaga	agcagcccct	agateettte	1680
tagggcacco	: acagaaaacc	acagcacccg	ctggccccag	ggggaggagg	cactttcagc	1740
ctctggctca	ctcgaatgtc	agagettaga	tgagggtgca	cctttggttt	ggattctgta	1800
gaagccatga	gtgaggtggg	aagtgttttc	cagggttgtt	gccacgccct	gggtaagtaa	1860
cacctctgag	gattctcaga	agcacacttg	agatctgagg	aacgctgctc	tcatgtagta	1920
atcatctatt	cccaaagggc	cccctgcagt	agtcaaaact	atttgtttat	cccccaaat	1980
cctatcttta	caaatggtgc	tgatgagatt	acaacccctc	tgtgtactaa	tcagcttatc	2040
aaccaagtga	gaacctagga	aagctaattg	gatggcagac	tgcttaaatc	gcagggagga	2100
ctcagaagcc	aaacctactt	ccgttcgttt	cattatctgc	aactttagaa	agaaatgatc	2160
ttttttccc	cctgaaaaga	taacaaagtc	tgcaatttgg	tttggagtat	tcctactgca	2220
gcctggaagt	ttagcttcac	tgtgaattta	acagagaaag	tgcctataaa	gggggcgttt	2280
ttaagagaca	atcccatgat	gctgcgccaa	tgctaacaac	agggtcaaga	aacacaatgt	2340
ttatagaagg	agcatccctc	gaccatctga	atgagagtat	gcctgacccc	ttccaccaca	2400
agtggggaca	cctctgcata	tctgctccct	cctctgctgt	taagccccag	ggagccccat	2460
ccacccagtg	gtcctacaga	cagggcaata	cacacacacc	aagatagcct	tcagatcaac	2520
atgcatcaca	ctcaagtgtt	aatctttcaa	ggttttctt	tctttttcct	gttttttatt	2580
tgttttgctt	ttgcttttt	tttttttt	tttggtggtg	gtggggctac	caaacttgag	2640
gcctagagct	aaaaatcata	tagaaatgat	gttatcttgt	ggtgtgagga	aaggccagct	2700
ggcctaagtt	cacacttttg	tcccagtggc	cctagactcc	acccagccag	ctcccaaaat	2760
gaaaagacca	cctgtcaagc	agcagtcagg	agtctgatgt	cacccatcac	tattttttt	2820
ccatcattgt	gcttgcctct	gcctccttcc	acacccgtgt	gacgtaatcg	cattgggaag	2880
ccaggacaat	gtttgctgtt	ctgctttggg	taaagggact	ccctgaagct	ctgtggctct	2940
ccagtatggt	cccttttcct	tcctaacaga	tgcatatgtt	ttcttcagaa	tacaatagtg	3000
attcttaaaa	taacccaaaa	gacaggcatc	cacagtgtgt	gagcatgaat	cacageetge	3060
attgtgtgag	tgtgaatagt	gggataaaag	tggatgtcag	aagagtggaa	atcaaacctc	3120
tgcaaagcaa	tctttctctt	tctgtgaagt	gtattaagaa	atacctgaag	tctgtgtgtg	3180
tggtggtacc	cagactgtca	atcaataaag	acccagactg	tcaatgaaaa	aaaaaaaaa	3240
aaaaaaaaa						3255

<210> 2

<211> 1459

<212> DNA

<213> mouse

<400> 2

<210> 3

<211> 857

<212> DNA

<213> mouse

<400> 3

ctcagatgac taaacctgac agaaacgctg gtgggaggct cgggcgggcg ccagtgcccg 60 egtaggteet tetegaceeg cagecaceae eegeeeggtg accatgatag tgtttgteag 120 gttcaactcc agctatggct tcccagtgga ggtcgattct gacaccagca tcttgcagct 180 caaggaagtg gttgctaagc gacagggggt tccagctgac cagctgcgtg tgatttttgc 240 egggaaggag etteegaate acetgaeggt teaaaactgt gaeetggaae aacagagtat 300 tgtacacata gtacagagac cacggaggag aagtcatgaa acaaatgcat ctggagggga 360 cgaaccccag agcacctcag agggctccat atgggagtcc aggagcttga cacgagtgga 420 cctgagcage cataccetge eggtggacte tgtggggetg geggteatte tggacacaga 480 cagtaagagg gattcagaag cagccagagg tccagcagtt aaacccacct acaacagctt 540 tttcatctac tgcaaaggcc cctgccacaa ggtccagcct ggaaagctcc gagttcagtg 600 tggcacetge aaacaagcaa ceetcacett ggeecaggge ceatettget gggacgatgt 660 cttaattcca aaccggatga gtggtgagtg ccagtctcca gactgccctg gaaccagagc 720 tgaatttttc tttaaatgtg gagcacaccc aacctcagac aaggacacgt cggtagcttt 780 gaacctgatc accagcaaca ggcgcagcat cccttgcata gcgtgcacag atgtcaggtt 840 tatgcgcatg agttagc 857

<210> 4

<211> 464

<212> PRT

<213> mouse

<400> 4

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys

35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

- Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
 65 70 75 80
- Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
 85 90 95
- Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
 100 105 110
- Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
 115 120 125
- Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130 135 140
- Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala 165 170 175
- Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met Ser 180 185 190
- Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe Phe 195 200 205
- Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val Ala 210 215 220
- Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala Cys
 225 230 235 240
- Thr Asp Val Arg Ser Pro Val Leu Val Phe Gln Cys Asn His Arg His 245 250 255
- Val Ile Cys Leu Asp Cys Phe His Leu Tyr Cys Val Thr Arg Leu Asn 260 265 270
- Asp Arg Gln Phe Val His Asp Ala Gln Leu Gly Tyr Ser Leu Pro Cys
 275
 280
 285
- Val Ala Gly Cys Pro Asn Ser Leu Ile Lys Glu Leu His His Phe Arg

290 295 300

Ile Leu Gly Glu Glu Gln Tyr Thr Arg Tyr Gln Gln Tyr Gly Ala Glu 305 310 315 320

Glu Cys Val Leu Gln Met Gly Gly Val Leu Cys Pro Arg Pro Gly Cys

Gly Ala Gly Leu Leu Pro Glu Gln Gly Gln Arg Lys Val Thr Cys Glu 340 345 350

Gly Gly Asn Gly Leu Gly Cys Gly Phe Val Phe Cys Arg Asp Cys Lys 355 360 365

Glu Ala Tyr His Glu Gly Asp Cys Asp Ser Leu Leu Glu Pro Ser Gly 370 375 380

Ala Thr Ser Gln Ala Tyr Arg Val Asp Lys Arg Ala Ala Glu Gln Ala 385 390 395 400

Arg Trp Glu Glu Ala Ser Lys Glu Thr Ile Lys Lys Thr Thr Lys Pro 405 410 415

Cys Pro Arg Cys Asn Val Pro Ile Glu Lys Asn Gly Gly Cys Met His
420 425 430

Met Lys Cys Pro Gln Pro Gln Cys Lys Leu Glu Trp Cys Trp Asn Cys 435

Gly Cys Glu Trp Asn Arg Ala Cys Met Gly Asp His Trp Phe Asp Val 450 455 460

<210> 5

<211> 262

<212> PRT

<213> mouse

<400> 5

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu 100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Ala Val Lys Pro Thr Tyr Asn 130 135 140

Ser Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly
145 150 155 160

Lys Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu 165 170 175

Ala Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met
180 185 190

Ser Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe
195 200 205

Phe Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val 210 215 220

Ala Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala 225 230 235 240

Cys Thr Asp Val Ser His Leu Pro Leu Ser Ser Gly Ala Ser Val Trp
245 250 255

Thr Arg Pro His Leu His 260

<210> 6 <211> 250

<212> PRT <213> mouse

<400> 6

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu 100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Ala Val Lys Pro Thr Tyr Asn 130 135 140

Lys Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu 165 170 175

Ala Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met 180 185 190

Ser Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe
195 200 205

Phe Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val

Ala Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala 225 230 235 240

Cys Thr Asp Val Arg Phe Met Arg Met Ser 245 250

<210> 7 <211> 3014 <212> DNA <213> mouse

<400> 7

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaecegee 120 eggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attetgacae cageatettg cageteaagg aagtggttge taagegacag ggggttecag 240 ctgaccaget gegtgtgatt tttgeeggga aggagettee gaateaeetg aeggtteaat 300 taaacccacc tacaacagct ttttcatcta ctgcaaaggc ccctgccaca aggtccagcc 360 tggaaagete egagtteagt gtggeacetg caaacaagea acceteacet tggeecaggg 420 cccatcttgc tgggacgatg tcttaattcc aaaccggatg agtggtgagt gccagtctcc 480 agactgccct ggaaccagag ctgaattttt ctttaaatgt ggagcacacc caacctcaga 540 caaggacacg teggtagett tgaacetgat caccagcaac aggegeagea teeettgeat 600 agegtgeaca gatgteagga gecetgteet ggtetteeag tgtaaceace gteaegtgat 660 ctgtttggac tgtttccact tgtattgtgt cacaagactc aacgatcggc agtttgtcca 720 cgatgeteaa ettggetaet ecetgeegtg tgtagetgge tgteccaaet ecetgattaa 780 agageteeat caetteagga teettggaga agageagtae aetaggtaee ageagtatgg 840 tggactgcta cctgaacagg gccagaggaa agtcacctgc gaagggggca acggcctggg 960 ctgcgggttt gttttctgcc gggactgtaa ggaagcatac catgaagggg attgcgactc 1020 actgotogaa cootcaggag coacttotoa ggootacagg gtggacaaaa gagoogotga 1080 gcaagetege tgggaggagg cetecaagga aaccateaag aagaceacea ageettgtee 1140 tegetgeaac gtgccaattg aaaaaacgg aggatgtatg cacatgaagt gtcctcagec 1200 ccagtgcaag ctggagtggt gctggaactg tggctgtgag tggaaccgag cctgcatggg 1260 agatcactgg tttgacgtgt agagagagat gtcacttggc cctggacgca caacctcaag 1320 ggaaactccg aagattccta ccttccttag ccatttcttc ttctcgatgc atataagcac 1380 ataaatgege acacacaaac acaggetgea gattacagaa geageeeeta gateetttet 1440 agggcaccca cagaaaacca cagcacccgc tggccccagg gggaggaggc actttcagcc 1500 tetggeteae tegaatgtea gagettagat gagggtgeae etttggtttg gattetgtag 1560 aagccatgag tgaggtggga agtgttttcc agggttgttg ccacgccctg ggtaagtaac 1620 acctctgagg attctcagaa gcacacttga gatctgagga acgctgctct catgtagtaa 1680 teatetatte ccaaagggee ceetgeagta gteaaaacta tttgtttate eccecaaate 1740 ctatetttae aaatggtget gatgagatta caaccectet gtgtactaat cagettatea 1800 accaagtgag aacctaggaa agctaattgg atggcagact gcttaaatcg cagggaggac 1860 tcagaagcca aacctacttc cgttcgtttc attatctgca actttagaaa gaaatgatct 1920 ttttttcccc ctgaaaagat aacaaagtct gcaatttggt ttggagtatt cctactgcag 1980 cctggaagtt tagcttcact gtgaatttaa cagagaaagt gcctataaag ggggcgtttt 2040 taagagacaa teecatgatg etgegecaat getaacaaca gggteaagaa acacaatgtt 2100 tatagaagga gcatccctcg accatctgaa tgagagtatg cctgacccct tccaccacaa 2160 gtggggacac ctctgcatat ctgctccctc ctctgctgtt aagccccagg gagccccatc 2220

caccagtgg tcctacagac agggcaatac acacacaca agatagcett cagatcaaca 2280 tgcatcacac tcaagtgtta atcttcaag gttttcttt cttttcctg tttttattt 2340 gttttgcttt tgctttttt tttttttt ttggtggtgg tggggctacc aaacttgagg 2400 cctagagcta aaaatcatat agaaatgatg ttatcttgtg gtgtgaggaa aggccagctg 2460 gcctaagttc acacttttgt cccagtggcc ctagactcca cccagccagc tcccaaaatg 2520 aaaagaccac ctgtcaagca gcagtcagga gtctgatgtc acccatcact attttttc 2580 catcattgtg cttgcctctg cctccttcca cacccgtgtg acgtaatcgc attgggaagc 2640 caggacaatg tttgctgttc tgctttggt aaagggactc cctgaagctc tgtggctctc 2700 cagtatggtc ccttttcct tcctaacagat gcatatgtt tcttcagaat acaatagtga 2760 ttcttaaaat aacccaaaag acaggcatcc acagtgtgtg agcatgaatc acaacctgca 2820 ttgtgtgagt gtgaatagtg ggataaaagt ggatgtcaga agagtggaaa tcaaacctct 2880 gcaaagcaat ctttctcttt ctgtgaagtg tattaagaaa tacctgaagt ctgtgtgtgt 2940 ggtggtacc agaactgcaa tcaatagaa tcaaaaaaa 3000 aaaaaaaaaa aaaa

<210> 8

<211> 2895

<212> DNA

<213> mouse

<400> 8

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaeeegee 120 eggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attetgacae cageatetty cageteaagg aagtggttge taagegacag ggggttecag 240 ctgaccagct gcgtgtgatt tttgccggga aggagcttcc gaatcacctg acggttcaag 300 geceatettg etgggaegat gtettaatte caaaceggat gagtggtgag tgecagtete 360 cagactgccc tggaaccaga gctgaatttt tctttaaatg tggagcacac ccaacctcag 420 acaaggacac gteggtaget ttgaaeetga teaecageaa caggegeage atecettgea 480 tagegtgeae agatgteagg agecetgtee tggtetteea gtgtaaceae egteaegtga 540 tetgtttgga etgttteeac ttgtattgtg teacaagaet caacgategg cagtttgtee 600 acgatgetea acttggetae teeetgeegt gtgtagetgg etgteecaae teeetgatta 660 aagageteea teaetteagg ateettggag aagageagta caetaggtae cageagtatg 720 gggccgagga atgcgtgctg caaatgggag gtgtgctgtg cccccgtcct ggctgtggag 780 ctggactgct acctgaacag ggccagagga aagtcacctg cgaagggggc aacggcctgg 840 gctgcgggtt tgttttctgc cgggactgta aggaagcata ccatgaaggg gattgcgact 900 cactgetega acceteagga gecaettete aggeetacag ggtggacaaa agageegetg 960 agcaageteg etgggaggag geetecaagg aaaccateaa gaagaceace aagcettgte 1020 ctcgctgcaa cgtgccaatt gaaaaaacg gaggatgtat gcacatgaag tgtcctcagc 1080 eccagtgeaa getggagtgg tgetggaact gtggetgtga gtggaacega geetgeatgg 1140 gagateaetg gtttgaegtg tagagagaga tgteaettgg eeetggaege acaaeetcaa 1200 gggaaactcc gaagatteet acctteetta gecatttett ettetegatg catataagea 1260 cataaatgeg cacacacaaa cacaggetge agattacaga ageageeeet agateettte 1320 tagggeacce acagaaaacc acagcacccg ctggccccag ggggaggagg cactttcage 1380 etetggetea etegaatgte agagettaga tgagggtgea eetttggttt ggattetgta 1440 gaagecatga gtgaggtggg aagtgtttte cagggttgtt gecaegeeet gggtaagtaa 1500 cacctctgag gattctcaga agcacacttg agatctgagg aacgctgctc tcatgtagta 1560 atcatctatt cccaaagggc cccctgcagt agtcaaaact atttgtttat ccccccaaat 1620

cctatettta caaatggtge tgatgagatt acaaccette tgtgtactaa teagettate 1680 aaccaagtga gaacctagga aagctaattg gatggcagac tgcttaaatc gcagggagga 1740 ctcagaagcc aaacctactt ccgttcgttt cattatctgc aactttagaa agaaatgatc 1800 tttttttccc cctgaaaaga taacaaagtc tgcaatttgg tttggagtat tcctactgca 1860 gcctggaagt ttagcttcac tgtgaattta acagagaaag tgcctataaa gggggcgttt 1920 ttaagagaca atcccatgat gctgcgccaa tgctaacaac agggtcaaga aacacaatgt 1980 ttatagaagg agcatecete gaccatetga atgagagtat geetgaeeee ttecaccaca 2040 agtggggaca ectetgeata tetgeteect ectetgetgt taageeceag ggageeceat 2100 ccacccagtg gtcctacaga cagggcaata cacacaccc aagatagcct tcagatcaac 2160 atgcatcaca ctcaagtgtt aatctttcaa ggttttcttt tctttttcct gttttttatt 2220 tgttttgctt ttgctttttt tttttttt tttggtggtg gtggggctac caaacttgag 2280 geetagaget aaaaateata tagaaatgat gttatettgt ggtgtgagga aaggeeaget 2340 ggcctaagtt cacacttttg teccagtgge ectagactee acceagecag eteccaaaat 2400 gaaaagacca cctgtcaagc agcagtcagg agtctgatgt cacccatcac tattttttt 2460 ccatcattgt gcttgcctct gcctccttcc acacccgtgt gacgtaatcg cattgggaag 2520 ccaggacaat gtttgctgtt ctgctttggg taaagggact ccctgaagct ctgtggctct 2580 ccagtatggt cccttttcct tcctaacaga tgcatatgtt ttcttcagaa tacaatagtg 2640 attettaaaa taacccaaaa gacaggcate cacagtgtgt gagcatgaat cacagcetge 2700 attgtgtgag tgtgaatagt gggataaaag tggatgtcag aagagtggaa atcaaacctc 2760 tgcaaagcaa totttotott totgtgaagt gtattaagaa atacotgaag totgtgtgtg 2820 aaaaaaaaa aaaaa 2895

<210> 9

<211> 2558

<212> DNA

<213> mouse

<400> 9

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaceegee 120 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attctgacac cagcatcttg cagctcaagg aagtggttgc taagcgacag ggggttccag 240 etgaccaget gegtgtgatt tttgeeggga aggagettee gaateacetg aeggtteaac 300 tggctgtccc aactccctga ttaaagagct ccatcacttc aggatccttg gagaagagca 360 gtacactagg taccagcagt atggggccga ggaatgcgtg ctgcaaatgg gaggtgtgct 420 gtgcccccgt cctggctgtg gagctggact gctacctgaa cagggccaga ggaaagtcac 480 ctgcgaaggg ggcaacggcc tgggctgcgg gtttgttttc tgccgggact gtaaggaagc 540 ataccatgaa ggggattgeg actcactget egaaccetea ggagecaett eteaggeeta 600 cagggtggac aaaagagccg ctgagcaagc tcgctgggag gaggcctcca aggaaaccat 660 caagaagacc accaagcett greetegetg caacgrgcca attgaaaaa acggaggatg 720 tatgcacatg aagtgteete ageeccagtg caagetggag tggtgetgga actgtggetg 780 tgagtggaac cgagcctgca tgggagatca ctggtttgac gtgtagagag agatgtcact 840 tggccctgga cgcacaacct caagggaaac tccgaagatt cctaccttcc ttagccattt 900 cttcttctcg atgcatataa gcacataaat gcgcacacac aaacacaggc tgcagattac 960 agaagcagce cetagateet ttetagggea cecacagaaa accacageae cegetggeee 1020 cagggggagg aggcactttc agcctctggc tcactcgaat gtcagagctt agatgagggt 1080 gcacctttgg tttggattct gtagaagcca tgagtgaggt gggaagtgtt ttccagggtt 1140

gttgccacge cetgggtaag taacacetet gaggattete agaagcacae ttgagatetg 1200 aggaacgetg eteteatgta gtaateatet atteecaaag ggeeceetge agtagteaaa 1260 actatttgtt tatcccccca aatcctatct ttacaaatgg tgctgatgag attacaaccc 1320 ctctgtgtac taatcagctt atcaaccaag tgagaaccta ggaaagctaa ttggatggca 1380 gactgettaa ategeaggga ggaeteagaa geeaaaeeta etteegtteg ttteattate 1440 tgcaacttta gaaagaaatg atctttttt ccccctgaaa agataacaaa gtctgcaatt 1500 tggtttggag tattcctact gcagcctgga agtttagctt cactgtgaat ttaacagaga 1560 aagtgeetat aaagggggeg titttaagag acaateeeat gatgetgege caatgetaae 1620 aacagggtca agaaacacaa tgtttataga aggagcatcc ctcgaccatc tgaatgagag 1680 tatgeetgae ceettecaee acaagtgggg acacetetge atatetgete ecteetetge 1740 tgttaagcee cagggageee catecaceca gtggteetae agacagggea atacacaca 1800 accaagatag cottcagato aacatgcato acactcaagt gttaatottt caaggtttto 1860 ttttcttttt cctgtttttt atttgttttg cttttgcttt ttttttttt ttttttggtg 1920 gtggtggggc taccaaactt gaggcctaga gctaaaaatc atatagaaat gatgttatct 1980 tgtggtgtga ggaaaggcca gctggcctaa gttcacactt ttgtcccagt ggccctagac 2040 tecacecage cageteccaa aatgaaaaga ecacetgtea ageageagte aggagtetga 2100 tgtcacccat cactattttt tttccatcat tgtgcttgcc tctgcctcct tccacacccg 2160 tgtgacgtaa tcgcattggg aagccaggac aatgtttgct gttctgcttt gggtaaaggg 2220 actecetgaa getetgtgge tetecagtat ggteeetttt cetteetaac agatgeatat 2280 gttttcttca gaatacaata gtgattctta aaataaccca aaagacaggc atccacagtg 2340 tgtgagcatg aatcacagcc tgcattgtgt gagtgtgaat agtgggataa aagtggatgt 2400 cagaagagtg gaaatcaaac ctctgcaaag caatctttct ctttctgtga agtgtattaa 2460 gaaatacctg aagtetgtgt gtgtggtggt acccagactg tcaatcaata aagacccaga 2520 ctgtcaatga aaaaaaaaa aaaaaaaaa aaaaaaaa

<210> 10 <211> 3136

<212> DNA

<213> mouse

<400> 10

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaeeegee 120 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attctgacac cagcatcttg cagctcaagg aagtggttgc taagcgacag ggggttccag 240 ctgaccaget gegtgtgatt tttgccggga aggagettee gaatcacetg aeggttcaaa 300 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagtc 360 atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420 agtecaggag ettgacaega gtggacetga geagecatae eetgeeggtg gaetetgtgg 480 ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540 ggcccatctt gctgggacga tgtcttaatt ccaaaccgga tgagtggtga gtgccagtct 600 ccagactgcc ctggaaccag agctgaattt ttctttaaat gtggagcaca cccaacctca 660 gacaaggaca egteggtage tttgaacetg atcaccagea acaggegeag catecettge 720 atagegtgca cagatgtcag gagecetgte etggtettee agtgtaacca eegteaegtg 780 atctgtttgg actgtttcca cttgtattgt gtcacaagac tcaacgatcg gcagtttgtc 840 cacgatgete aacttggeta etecetgeeg tgtgtagetg getgteecaa etecetgatt 900 aaagagetee ateaetteag gateettgga gaagageagt acaetaggta eeageagtat 960 ggggccgagg aatgcgtgct gcaaatggga ggtgtgctgt gcccccgtcc tggctgtgga 1020

```
getggaetge tacetgaaca gggeeagagg aaagteacet gegaaggggg caaeggeetg 1080
ggctgcgggt ttgttttctg ccgggactgt aaggaagcat accatgaagg ggattgcgac 1140
teactgeteg aacceteagg agceaettet caggeetaca gggtggacaa aagageeget 1200
gagcaagete getgggagga ggeeteeaag gaaaceatea agaagaceae caageettgt 1260
cctcgctgca acgtgccaat tgaaaaaac ggaggatgta tgcacatgaa gtgtcctcag 1320
ccccagtgca agctggagtg gtgctggaac tgtggctgtg agtggaaccg agcctgcatg 1380
ggagateact ggtttgacgt gtagagaga atgteacttg geeetggacg cacaacetea 1440
agggaaactc cgaagattcc taccttectt agecatttet tettetegat gcatataage 1500
acataaatgc gcacacacaa acacaggctg cagattacag aagcagcccc tagatccttt 1560
ctagggcacc cacagaaaac cacagcaccc getggcccca gggggaggag gcactttcag 1620
cetetggete actegaatgt cagagettag atgagggtge acetttggtt tggattetgt 1680
agaagccatg agtgaggtgg gaagtgtttt ccagggttgt tgccacgccc tgggtaagta 1740
acacctetga ggatteteag aageacaett gagatetgag gaaegetget eteatgtagt 1800
aatcatctat tcccaaaggg cccctgcag tagtcaaaac tatttgttta tccccccaaa 1860
tectatettt acaaatggtg etgatgagat tacaacceet etgtgtacta ateagettat 1920
caaccaagtg agaacctagg aaagctaatt ggatggcaga ctgcttaaat cgcagggagg 1980
actcagaagc caaacctact tccgttcgtt tcattatctg caactttaga aagaaatgat 2040
ctttttttcc ccctgaaaag ataacaaagt ctgcaatttg gtttggagta ttcctactgc 2100
agcctggaag tttagcttca ctgtgaattt aacagagaaa gtgcctataa agggggcgtt 2160
tttaagagac aatcccatga tgctgcgcca atgctaacaa cagggtcaag aaacacaatg 2220
tttatagaag gagcatccct cgaccatctg aatgagagta tgcctgaccc cttccaccac 2280
aagtggggac acctetgeat atetgeteee teetetgetg ttaageeeca gggageeeca 2340
tecacecagt ggteetacag acagggeaat acacacac caagatagee ttcagateaa 2400
catgcatcac actcaagtgt taatctttca aggttttctt ttcttttcc tgttttttat 2460
ttgttttgct tttgcttttt tttttttt ttttggtggt ggtggggcta ccaaacttga 2520
ggcctagagc taaaaatcat atagaaatga tgttatcttg tggtgtgagg aaaggccagc 2580
tggcctaagt tcacactttt gtcccagtgg ccctagactc cacccagcca gctcccaaaa 2640
tgaaaagacc acctgtcaag cagcagtcag gagtctgatg tcacccatca ctatttttt 2700
tecateatty tyettyeete tyeeteette cacaceegty tyaeytaate geattyggaa 2760
gecaggacaa tgtttgetgt tetgetttgg gtaaagggae teeetgaage tetgtggete 2820
tecagtatgg tecettttee tteetaacag atgeatatgt tttetteaga atacaatagt 2880
gattettaaa ataacccaaa agacaggeat ceacagtgtg tgagcatgaa teacageetg 2940
cattgtgtga gtgtgaatag tgggataaaa gtggatgtca gaagagtgga aatcaaacct 3000
ctgcaaagca atctttctct ttctgtgaag tgtattaaga aatacctgaa gtctgtgtgt 3060
aaaaaaaaa aaaaaa
                                                                3136
```

<210> 11

<211> 3170

<212> DNA

<213> mouse

<400> 11

ctcagcgagg ggaagggga ggaggcctgg atgactaaac ctgacagaa cgctggtggg 60 aggctcggc gggccagt gcccgctag gtccttctcg acccgcagcc accaccegcc 120 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttcca gtggaggtcg 180 attctgacac cagcatcttg cagctcaagg aagtggttgc taagcgacag ggggttccag 240 ctgaccagct gcgtgtgatt tttgccggga aggagettcc gaatcacctg acggttcaaa 300

actgtgacct	ggaacaacag	agtattgtac	acatagtaca	gagaccacgg	aggagaagtc	360
atgaaacaaa	tgcatctgga	ggggacgaac	cccagagcac	ctcagagggc	tccatatggg	420
agtccaggag	cttgacacga	gtggacctga	gcagccatac	cctgccggtg	gactctgtgg	480
ggctggcggt	cattctggac	acagacagta	agagggattc	agaagcagcc	agaggtccag	540
ttaaacccac	ctacaacagc	tttttcatct	actgcaaagg	cccctgccac	aaggtccagc	600
ctggaaagct	ccgagttcag	tgtggcacct	gcaaacaagc	aaccctcacc	ttggcccaga	660
atttttcttt	aaatgtggag	cacacccaac	ctcagacaag	gacacgtcgg	tagctttgaa	720
			ttgcatagcg			780
tgtcctggtc	ttccagtgta	accaccgtca	cgtgatctgt	ttggactgtt	tccacttgta	840
			tgtccacgat			
			gattaaagag			
			gtatggggcc			
			tggagctgga			
			cctgggctgc			
			cgactcactg			
			cgctgagcaa			
			ttgtcctcgc			
			tcagccccag			
			catgggagat			
			ctcaagggaa		•	
			aagcacataa			
			ctttctaggg			
			tcagcctctg			
			ctgtagaagc			
			agtaacacct			
acttgagatc	tgaggaacgc	tgctctcatg	tagtaatcat	ctattcccaa	agggccccct	1860
gcagtagtca	aaactatttg	tttatccccc	caaatcctat	ctttacaaat	ggtgctgatg	1920
			ttatcaacca			
aattggatgg	cagactgctt	aaatcgcagg	gaggactcag	aagccaaacc	tacttccgtt	2040
			tgatctttt			
			ctgcagcctg			
			cgtttttaag			
			aatgtttata			
			ccacaagtgg			
tecetectet	gctgttaagc	cccagggagc	cccatccacc	cagtggtcct	acagacaggg	2400
caatacacac	acaccaagat	agccttcaga	tcaacatgca	tcacactcaa	gtgttaatct	2460
			ttatttgttt			
tttttttgg	tggtggtggg	gctaccaaac	ttgaggccta	gagctaaaaa	tcatatagaa	2580
atgatgttat	cttgtggtgt	gaggaaaggc	cagctggcct	aagttcacac	ttttgtccca	2640
			aaaatgaaaa			
tcaggagtct	gatgtcaccc	atcactattt	tttttccatc	attgtgcttg	cctctgcctc	2760
cttccacacc	cgtgtgacgt	aatcgcattg	ggaagccagg	acaatgtttg	ctgttctgct	2820
ttgggtaaag	ggactccctg	aagctctgtg	gctctccagt	atggtccctt	ttccttccta	2880
acagatgcat	atgttttctt	cagaatacaa	tagtgattct	taaaataacc	caaaagacag	2940
gcatccacag	tgtgtgagca	tgaatcacag	cctgcattgt	gtgagtgtga	atagtgggat	3000
aaaagtggat	gtcagaagag	tggaaatcaa	acctctgcaa	agcaatcttt	ctctttctgt	3060
gaagtgtatt	aagaaatacc	tgaagtctgt	gtgtgtggtg	gtacccagac	tgtcaatcaa	3120
taaagaccca	gactgtcaat	gaaaaaaaa	aaaaaaaaa	aaaaaaaaa		3170

<210> 12 <211> 2918 <212> DNA <213> mouse

<400> 12

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaeeegee 120 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attetgacae cageatettg cageteaagg aagtggttge taagegacag ggggttecag 240 ctgaccaget gegtgtgatt tttgeeggga aggagettee gaateacetg aeggtteaaa 300 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagte 360 atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420 agtecaggag ettgacaega gtggacetga geagecatae eetgeeggtg gaetetgtgg 480 ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540 ttaaacccac ctacaacage tttttcatct actgcaaagg cccctgccac aaggtccage 600 ctggaaagct ccgagttcag tgtggcacct gcaaacaagc aaccctcacc ttggcccagc 660 tggctgtccc aactccctga ttaaagagct ccatcacttc aggatccttg gagaagagca 720 gtacactagg taccagcagt atggggccga ggaatgcgtg ctgcaaatgg gaggtgtgct 780 gtgcccccgt cctggctgtg gagctggact gctacctgaa cagggccaga ggaaagtcac 840 ctgcgaaggg ggcaacggcc tgggctgcgg gtttgttttc tgccgggact gtaaggaagc 900 ataccatgaa ggggattgcg actcactgct cgaaccctca ggagccactt ctcaggccta 960 cagggtggac aaaagagccg ctgagcaagc tcgctgggag gaggcctcca aggaaaccat 1020 caagaagacc accaagcett gteetegetg caacgtgeca attgaaaaaa acggaggatg 1080 tatgcacatg aagtgtcctc agccccagtg caagctggag tggtgctgga actgtggctg 1140 tgagtggaac cgagcctgca tgggagatca ctggtttgac gtgtagagag agatgtcact 1200 tggccctgga cgcacaacct caagggaaac tccgaagatt cctaccttcc ttagccattt 1260 cttcttctcg atgcatataa gcacataaat gcgcacacac aaacacaggc tgcagattac 1320 agaagcagcc cctagatcct ttctagggca cccacagaaa accacagcac ccgctggccc 1380 cagggggagg aggcactttc agcctctggc tcactcgaat gtcagagctt agatgagggt 1440 gcacctttgg tttggattct gtagaagcca tgagtgaggt gggaagtgtt ttccagggtt 1500 gttgccacge cetgggtaag taacacetet gaggattete agaageacae ttgagatetg 1560 aggaacgctg ctctcatgta gtaatcatct attcccaaag ggccccctgc agtagtcaaa 1620 actatttgtt tatcccccca aatcctatct ttacaaatgg tgctgatgag attacaaccc 1680 ctctgtgtac taatcagctt atcaaccaag tgagaaccta ggaaagctaa ttggatggca 1740 gactgcttaa atcgcaggga ggactcagaa gccaaaccta cttccgttcg tttcattatc 1800 tgcaacttta gaaagaaatg atctttttt ccccctgaaa agataacaaa gtctgcaatt 1860 tggtttggag tattcctact gcagcctgga agtttagctt cactgtgaat ttaacagaga 1920 aagtgeetat aaagggggeg tttttaagag acaateeeat gatgetgege caatgetaac 1980 aacagggtca agaaacacaa tgtttataga aggagcatcc ctcgaccatc tgaatgagag 2040 tatgeetgae ecetteeace acaagtgggg acacetetge atatetgete ecteetetge 2100 tgttaagccc cagggagccc catccaccca gtggtcctac agacagggca atacacaca 2160 accaagatag cottoagato aacatgoato acactoaagt gttaatottt caaggtttto 2220 ttttcttttt cctgtttttt atttgttttg cttttgcttt ttttttttt ttttttggtg 2280 gtggtggggc taccaaactt gaggcctaga gctaaaaatc atatagaaat gatgttatct 2340 tgtggtgtga ggaaaggcca gctggcctaa gttcacactt ttgtcccagt ggccctagac 2400 tecacecage cageteccaa aatgaaaaga ecacetgtea ageageagte aggagtetga 2460

tgtcaccat cactatttt tttccatcat tgtgcttgcc tctgcctct tccacaccg 2520 tgtgacgta tcgcattgg aagccaggac aatgtttgct gttctgctt gggtaaaggg 2580 actccctgaa gctctgtgg tctccagtat ggtcccttt ccttcctaac agatgcatat 2640 gttttcttca gaatacaata gtgattctta aaataaccca aaagacaggc atccacagtg 2700 tgtgagcatg aatcacagc tgcattgtg gagtgtgaat agtgggataa aagtggatgt 2760 cagaagagtg gaaatcaaac ctctgcaaag caatctttct ctttctgtga agtgtattaa 2820 gaaatacctg aagtctgtg gtgtggtg acccagactg tcaatcaata aagacccaga 2880 ctgtcaatga aaaaaaaa aaaaaaaaa aaaaaaaa

<210> 13 <211> 3043

<212> DNA

<213> mouse

<400> 13

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaecegee 120 eggtgaccat gatagtgttt gteaggttea actecageta tggetteeca gtggaggteg 180 attetgacae cageatettg cageteaagg aagtggttge taagegacag ggggttecag 240 ctgaccaget gegtgtgatt tttgeeggga aggagettee gaatcacetg aeggtteaaa 300 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagtc 360 atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420 agtccaggag cttgacacga gtggacctga gcagccatac cctgccggtg gactctgtgg 480 ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540 ttaaacccac ctacaacage tttttcatct actgcaaagg cccctgccac aaggtccage 600 ctggaaaget eegagtteag tgtggeaeet geaaacaage aacceteace ttggeeeagg 660 gcccatcttg ctgggacgat gtcttaattc caaaccggat gagtggtgag tgccagtctc 720 cagactgeee tggaaccaga getgaatttt tetttaaatg tggageacae ccaaceteag 780 acaaggacac gteggtaget ttgaacetga teaceageaa caggegeage atecettgea 840 tagegtgeae agatgteagg agecetgtee tggtetteea gtgtaaceae egteaegtga 900 tetgtttgga etgtttecae ttgtattgtg teacaagaet caacgategg cagtttgtee 960 acgatgetca acttggetae teeetgeegt gtgtagtttg ttttetgeeg ggaetgtaag 1020 gaagcatacc atgaagggga ttgcgactca ctgctcgaac cctcaggagc cacttctcag 1080 gectaeaggg tggacaaaag ageegetgag caageteget gggaggagge etecaaggaa 1140 accatcaaga agaccaccaa gccttgtcct cgctgcaacg tgccaattga aaaaaacgga 1200 ggatgtatgc acatgaagtg teeteageee cagtgcaage tggagtggtg etggaactgt 1260 ggctgtgagt ggaaccgagc ctgcatggga gatcactggt ttgacgtgta gagagagatg 1320 tcacttggcc ctggacgcac aacctcaagg gaaactccga agattcctac cttccttagc 1380 catttettet tetegatgea tataageaca taaatgegea cacacaaaca caggetgeag 1440 attacagaag cagcccctag atcctttcta gggcacccac agaaaaccac agcacccgct 1500 ggccccaggg ggaggaggca ctttcagcct ctggctcact cgaatgtcag agcttagatg 1560 agggtgcacc tttggtttgg attctgtaga agccatgagt gaggtgggaa gtgttttcca 1620 gggttgttgc cacgccctgg gtaagtaaca cctctgagga ttctcagaag cacacttgag 1680 atctgaggaa egetgetete atgtagtaat catetattee caaagggeee eetgeagtag 1740 tcaaaactat ttgtttatcc ccccaaatcc tatctttaca aatggtgctg atgagattac 1800 aacccctctg tgtactaatc agcttatcaa ccaagtgaga acctaggaaa gctaattgga 1860 tggcagactg cttaaatcgc agggaggact cagaagccaa acctacttcc gttcgtttca 1920 ttatctgcaa ctttagaaag aaatgatctt tttttccccc tgaaaagata acaaagtctg 1980

caatttggtt tggagtattc ctactgcagc ctggaagttt agettcactg tgaatttaac 2040 agagaaagtg cctataaagg gggcgttttt aagagacaat cccatgatgc tgcgccaatg 2100 ctaacaacag ggtcaagaaa cacaatgttt atagaaggag catccctcga ccatctgaat 2160 gagagtatge etgaceeett ceaceacaag tggggacace tetgcatate tgeteeetee 2220 tetgetgtta agecceaggg agecceatee acceagtggt cetacagaca gggcaataca 2280 cacacaccaa gatageette agateaacat geateacact caagtgttaa tettteaagg 2340 ttttcttttc tttttcctgt tttttatttg ttttgctttt gcttttttt tttttttt 2400 tggtggtggt ggggctacca aacttgaggc ctagagctaa aaatcatata gaaatgatgt 2460 tatettgtgg tgtgaggaaa ggccagetgg cetaagttea caettttgte ccagtggeec 2520 tagactecae ecagecaget eccaaaatga aaagaceaee tgteaageag eagteaggag 2580 tetgatgtea eccateacta tittititee ateatigige tigeeteige etecticeae 2640 accegtgtga egtaategea ttgggaagee aggacaatgt ttgetgttet getttgggta 2700 aagggactee etgaagetet gtggetetee agtatggtee etttteette etaacagatg 2760 catatgtttt cttcagaata caatagtgat tcttaaaata acccaaaaga caggcatcca 2820 cagtgtgtga gcatgaatca cagcctgcat tgtgtgagtg tgaatagtgg gataaaagtg 2880 gatgtcagaa gagtggaaat caaacctctg caaagcaatc tttctctttc tgtgaagtgt 2940 attaagaaat acctgaagtc tgtgtgtgtg gtggtaccca gactgtcaat caataaagac 3000 ccagactgtc aatgaaaaaa aaaaaaaaa aaa 3043

<210> 14

<211> 3253

<212> DNA

<213> mouse

<400> 14

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegecagt gecegegtag gteetteteg accegeagee accaecegee 120 eggtgaccat gatagtgttt gteaggttea actecageta tggetteeca gtggaggteg 180 attotgacac cagcatottg cagotoaagg aagtggttgo taagogacgg ggttocagot 240 gaccagetge gtgtgatttt tgeegggaag gagetteega ateacetgae ggtteaaaac 300 tgtgacctgg aacaacagag tattgtacac atagtacaga gaccacggag gagaagtcat 360 gaaacaaatg catctggagg ggacgaaccc cagagcacct cagagggctc catatgggag 420 tccaggagct tgacacgagt ggacctgagc agccataccc tgccggtgga ctctgtgggg 480 ctggcggtca ttctggacac agacagtaag agggattcag aagcagccag aggtccagtt 540 aaacccacct acaacagett tttcatctae tgcaaaggee eetgeeacaa ggteeageet 600 ggaaagetee gagtteagtg tggeacetge aaacaagcaa eeeteacett ggeeeaggge 660 ccatcttgct gggacgatgt cttaattcca aaccggatga gtggtgagtg ccagtctcca 720 gactgeeetg gaaccagage tgaattttte tttaaatgtg gagcacacce aacctcagae 780 aaggacacgt cggtagcttt gaacctgatc accagcaaca ggcgcagcat cccttgcata 840 gegtgeacag atgteaggag ceetgteetg gtetteeagt gtaaccaccg teacgtgate 900 tgtttggact gtttccactt gtattgtgtc acaagactca acgatcggca gtttgtccac 960 gatgctcaac ttggctactc cctgccgtgt gtagctggct gtcccaactc cctgattaaa 1020 gagetecate aetteaggat eettggagaa gageagtaca etaggtacea geagtatggg 1080 gccgaggaat gcgtgctgca aatgggaggt gtgctgtgcc cccgtcctgg ctgtggagct 1140 ggactgctac ctgaacaggg ccagaggaaa gtcacctgcg aagggggcaa cggcctgggc 1200 tgcgggtttg ttttctgccg ggactgtaag gaagcatacc atgaagggga ttgcgactca 1260 ctgctcgaac cctcaggagc cacttctcag gcctacaggg tggacaaaag agccgctgag 1320 caageteget gggaggagge etecaaggaa accateaaga agaceaceaa geettgteet 1380



cgctgcaacg	tgccaattga	aaaaaacgga	ggatgtatgc	acatgaagtg	tcctcagccc	1440
cagtgcaagc	tggagtggtg	ctggaactgt	ggctgtgagt	ggaaccgagc	ctgcatggga	1500
				ctggacgcac		
				tctcgatgca		
taaatgcgca	cacacaaca	caggctgcag	attacagaag	cagcccctag	atcctttcta	1680
gggcacccac	agaaaaccac	agcacccgct	ggccccaggg	ggaggaggca	ctttcagcct	1740
ctggctcact	cgaatgtcag	agcttagatg	agggtgcacc	tttggtttgg	attctgtaga	1800
agccatgagt	gaggtgggaa	gtgttttcca	gggttgttgc	cacgecetgg	gtaagtaaca	1860
cctctgagga	ttctcagaag	cacacttgag	atctgaggaa	cgctgctctc	atgtagtaat	1920
catctattcc	caaagggccc	cctgcagtag	tcaaaactat	ttgtttatcc	ccccaaatcc	1980
tatctttaca	aatggtgctg	atgagattac	aacccctctg	tgtactaatc	agcttatcaa	2040
ccaagtgaga	acctaggaaa	gctaattgga	tggcagactg	cttaaatcgc	agggaggact	2100
cagaagccaa	acctacttcc	gttcgtttca	ttatctgcaa	ctttagaaag	aaatgatctt	2160
ttttccccc	tgaaaagata	acaaagtctg	caatttggtt	tggagtattc	ctactgcagc	2220
ctggaagttt	agcttcactg	tgaatttaac	agagaaagtg	cctataaagg	gggcgttttt	2280
aagagacaat	cccatgatgc	tgcgccaatg	ctaacaacag	ggtcaagaaa	cacaatgttt	2340
atagaaggag	catccctcga	ccatctgaat	gagagtatgc	ctgacccctt	ccaccacaag	2400
tggggacacc	tctgcatatc	tgctccctcc	tctgctgtta	agccccaggg	agccccatcc	2460
acccagtggt	cctacagaca	gggcaataca	cacacaccaa	gatageette	agatcaacat	2520
gcatcacact	caagtgttaa	tctttcaagg	ttttctttc	tttttcctgt	tttttatttg	2580
ttttgctttt	gcttttttt	tttttttt	tggtggtggt	ggggctacca	aacttgaggc	2640
ctagagctaa	aaatcatata	gaaatgatgt	tatcttgtgg	tgtgaggaaa	ggccagctgg	2700
cctaagttca	cacttttgtc	ccagtggccc	tagactccac	ccagccagct	cccaaaatga	2760
aaagaccacc	tgtcaagcag	cagtcaggag	tctgatgtca	cccatcacta	tttttttcc	2820
atcattgtgc	ttgcctctgc	ctccttccac	acccgtgtga	cgtaatcgca	ttgggaagcc	2880
aggacaatgt	ttgctgttct	gctttgggta	aagggactcc	ctgaagctct	gtggctctcc	2940
agtatggtcc	cttttccttc	ctaacagatg	catatgtttt	cttcagaata	caatagtgat	3000
tcttaaaata	acccaaaaga	caggcatcca	cagtgtgtga	gcatgaatca	cagcctgcat	3060
tgtgtgagtg	tgaatagtgg	gataaaagtg	gatgtcagaa	gagtggaaat	caaacctctg	3120
caaagcaatc	tttctctttc	tgtgaagtgt	attaagaaat	acctgaagtc	tgtgtgtgtg	3180
gtggtaccca	gactgtcaat	caataaagac	ccagactgtc	aatgaaaaaa	aaaaaaaaa	3240
aaaaaaaaa	aaa					3253

<210> 15 <211> 3254

<212> DNA

<213> mouse

<400> 15

ctcagcgaggggaaggggaggaggcctggatgactaaacctgacagaaacgctggtggg60aggctcgggggcgccagtgcccgcgtaggtccttctcgacccgcagcaccaccgc120cggtgaccatgatagtgtttgtcaggttcaactccagctatggcttcccagtggaggtcg180attctgacaccagcatcttgcagctcaaggaagtggttgtaagcgacagggggttccag240ctgaccagctgcgttgatttttgccgggaaggacttccgatcacctgacggttcaaaa300ctgtgacctggaaccacagagtattgtacacatagtacagagaccacggaggaagagtca360tgaaacaaatgcatctggagggaacgaaccccagagcacctcagagggctccatatggga420gtccaggagcttgacacgatggacctgacagccataccctgccggtgactctgtgg480gctggcgtattctggaccagacagtagaaggattcagaagcagccgaagcagcc

9	gtggtaccc	agactgtcaa	tcaataaaga	cccagactot	Caatuaaaa	3333333	3240
ć	gcaaagcaat	ctttctcttt	ctgtgaagtg	tattaagaaa	tacctgaagt	ctgtgtgtgt	3180
t	ttgtgtgagt	gtgaatagtg	ggataaaagt	ggatgtcaga	agagtggaaa	tcaaacctct	3120
t	ttcttaaaat	aacccaaaag	acaggcatcc	acagtgtgtg	agcatgaatc	acagectoca	3060
¢	cagtatggtc	ccttttcctt	cctaacagat	gcatatgttt	tcttcagaat	acaatagtga	3000
c	caggacaatg	tttgctgttc	tgctttgggt	aaagggactc	cctgaagete	tgtggctctc	2940
•	catcattgtg	cttgcctctg	cctccttcca	cacccgtgtg	acgtaatcgc	attgggaage	2880
ě	aaaagaccac	ctgtcaagca	gcagtcagga	gtctgatgtc	acccatcact	atttttttc	2820
Ş	gcctaagttc	acacttttgt	cccagtggcc	ctagactcca	cccagccage	toccaaaato	2760
•	cctagagcta	aaaatcatat	agaaatgatg	ttatcttgtg	gtgtgaggaa	aggccageto	2700
9	gttttgcttt	tgctttttt	tttttttt	ttggtggtgg	tggggctacc	aaacttgagg	2640
1	tgcatcacac	tcaagtgtta	atctttcaag	gttttcttt	ctttttccta	ttttttattt	2580
			agggcaatac				
9	gtggggacac	ctctgcatat	ctgctccctc	ctctgctgtt	aagccccagg	gagececate	2460
	tatagaagga	gcatccctcg	accatctgaa	tgagagtatg	cctgacccct	tocaccacaa	2400
			ctgcgccaat				
,	cctggaagtt	tagcttcact	gtgaatttaa	cagagaaagt	gcctataaag	gagacattt	2280
	ttttttcccc	ctgaaaagat	aacaaagtct	gcaatttggt	ttggagtatt	cctactgeag	2220
	tcagaagcca	aacctacttc	cgttcgtttc	attatctqca	actttagaaa	gaaatgatch	2160
	accaagtgag	aacctaggaa	agctaattgg	atggcagact	gcttaaatcg	cagggaggag	2100
			gatgagatta				
			ccctgcagta				
			gcacacttga				
			agtgttttcc				
			gagcttagat				
			cagcacccgc				
			acaggetgea				
			ccttccttag				
	agatcactgg	tttgacgtgt	agagagagat	gtcacttggc	cctggacgca	caacctcaag	1560
	ccagtgcaag	ctggagtggt	gctggaactg	tggctgtgag	tggaaccgag	cctgcatggg	1500
	tcgctgcaac	gtgccaattg	aaaaaaacgg	aggatgtatg	cacatgaagt	gtcctcagcc	1440
	gcaagctcgc	tgggaggagg	cctccaagga	aaccatcaag	aagaccacca	agccttgtcc	1380
			ccacttctca				
			gggactgtaa				
			gccagaggaa				
			aaatgggagg				
	agagetecat	cacttcagga	tecttggaga	agagcagtac	actaggtacc	agcagtatgg	1080
			ccctgccgtg				
			tgtattgtgt				
	agcgtgcaca	gatgtcagga	gccctgtcct	ggtcttccag	tgtaaccacc	gtcacgtgat	900
	caaggacacg	tcggtagctt	tgaacctgat	caccagcaac	aggcgcagca	tcccttgcat	840
	agactgccct	ggaaccagag	ctgaattttt	ctttaaatgt	ggagcacacc	caacctcaga	780
	cccatcttgc	tgggacgatg	tcttaattcc	aaaccggatg	agtggtgagt	gccagtetee	720
	tggaaagctc	cgagttcagt	gtggcacctg	caaacaagca	acceteacet	tggcccaggg	660
	taaacccacc	tacaacagct	ttttcatcta	ctgcaaaggc	ccctgccaca	aggtccagcc	600

<211> 3253 <212> DNA <213> mouse

<400> 16

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt gecegegtag gteetteteg accegeagee accaecegee 120 eggtgaecat gatagtgttt gtcaggttca actecageta tggetteeca gtggaggteg 180 attetgaeae cageatettg cageteaagg aagtggttge taagegaeag ggggtteeag 240 ctgaccaget gegtgtgatt tttgeeggga aggagettee gaateacetg aeggtteaaa 300 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg gagaagtcat 360 gaaacaaatg catctggagg ggacgaaccc cagagcacct cagagggctc catatgggag 420 tecaggaget tgacacgagt ggacetgage agecatacce tgeeggtgga etetgtgggg 480 ctggcggtca ttctggacac agacagtaag agggattcag aagcagccag aggtccagtt 540 aaacccacct acaacagett tttcatctac tgcaaaggee cetgecacaa ggtecageet 600 ggaaagetee gagtteagtg tggeaeetge aaacaageaa ceetcaeett ggeeeaggge 660 ccatcttgct gggacgatgt cttaattcca aaccggatga gtggtgagtg ccagtctcca 720 gactgccctg gaaccagage tgaattttte tttaaatgtg gagcacacce aacctcagae 780 aaggacacgt eggtagettt gaacetgate accagcaaca ggegeageat ceettgeata 840 gegtgeacag atgteaggag ecctgteetg gtetteeagt gtaaceaceg teaegtgate 900 tgtttggact gtttccactt gtattgtgtc acaagactca acgatcggca gtttgtccac 960 gatgeteaae ttggetaete cetgeegtgt gtagetgget gteecaacte eetgattaaa 1020 gagetecate aetteaggat cettggagaa gageagtaea etaggtaeea geagtatggg 1080 geegaggaat gegtgetgea aatgggaggt gtgetgtgee eeegteetgg etgtggaget 1140 ggactgetae etgaacaggg ceagaggaaa gteacetgeg aagggggeaa eggeetggge 1200 tgegggtttg ttttctgeeg ggactgtaag gaagcatace atgaagggga ttgegactca 1260 ctgctcgaac cctcaggagc cacttctcag gcctacaggg tggacaaaag agccgctgag 1320 caageteget gggaggagge etecaaggaa accatcaaga agaccaccaa geettgteet 1380 cgctgcaacg tgccaattga aaaaaacgga ggatgtatgc acatgaagtg tcctcagccc 1440 cagtgcaage tggagtggtg ctggaactgt ggctgtgagt ggaaccgage ctgcatggga 1500 gatcactggt ttgacgtgta gagagagatg tcacttggcc ctggacgcac aacctcaagg 1560 gaaacteega agatteetae etteettage eatttettet tetegatgea tataageaca 1620 taaatgegea cacacaaaca caggetgeag attacagaag cageeectag ateettteta 1680 gggcacccac agaaaaccac agcacccgct ggccccaggg ggaggaggca ctttcagcct 1740 agccatgagt gaggtgggaa gtgttttcca gggttgttgc cacgccctgg gtaagtaaca 1860 cctctgagga ttctcagaag cacacttgag atctgaggaa cgctgctctc atgtagtaat 1920 catctattcc caaagggeee cetgeagtag teaaaactat ttgtttatce eeccaaatee 1980 tatetttaca aatggtgetg atgagattae aacceetetg tgtactaate agettateaa 2040 ccaagtgaga acctaggaaa gctaattgga tggcagactg cttaaatcgc agggaggact 2100 cagaagccaa acctacttcc gttcgtttca ttatctgcaa ctttagaaag aaatgatctt 2160 tttttccccc tgaaaagata acaaagtctg caatttggtt tggagtattc ctactgcagc 2220 ctggaagttt agcttcactg tgaatttaac agagaaagtg cctataaagg gggcgttttt 2280 aagagacaat cccatgatgc tgcgccaatg ctaacaacag ggtcaagaaa cacaatgttt 2340 atagaaggag catccetega ceatetgaat gagagtatge etgacceett ceaccacaag 2400 tggggacacc tetgeatate tgetecetee tetgetgtta agecceaggg agecceatee 2460 acccagtggt cetacagaca gggcaataca cacacaccaa gatagcette agatcaacat 2520 gcatcacact caagtgttaa totttcaagg ttttcttttc tttttcctgt tttttatttg 2580

ttttgctttt	gcttttttt	tttttttt	tggtggtggt	ggggctacca	aacttgaggc	2640
ctagagetaa	aaatcatata	gaaatgatgt	tatcttgtgg	tgtgaggaaa	ggccagctgg	2700
cctaagttca	cacttttgtc	ccagtggccc	tagactccac	ccagccagct	cccaaaatga	2760
aaagaccacc	tgtcaagcag	cagtcaggag	tctgatgtca	cccatcacta	tttttttcc	2820
atcattgtgc	ttgcctctgc	ctccttccac	acccgtgtga	cgtaatcgca	ttgggaagcc	2880
aggacaatgt	ttgctgttct	gctttgggta	aagggactcc	ctgaagctct	gtggctctcc	2940
agtatggtcc	cttttccttc	ctaacagatg	catatgtttt	cttcagaata	caatagtgat	3000
tcttaaaata	acccaaaaga	caggcatcca	cagtgtgtga	gcatgaatca	cagcotgoat	3060
tgtgtgagtg	tgaatagtgg	gataaaagtg	gatgtcagaa	gagtggaaat	caaacctctg	3120
caaagcaatc	tttctctttc	tgtgaagtgt	attaagaaat	acctgaagtc	tgtgtgtgtq	3180
	gactgtcaat					
aaaaaaaaa						3253

<210> 17

<211> 3092

<212> DNA

<213> mouse

<400> 17

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt gecegegtag gteetteteg accegeagee accaeeegee 120 eggtgaccat gatagtaact gtgacetgga acaacagagt attgtacaca tagtacagag 180 accacggagg agaagtcatg aaacaaatgc atctggaggg gacgaacccc agagcacctc 240 agagggetee atatgggagt ecaggagett gacacgagtg gacetgagea gecataceet 300 gccggtggac tctgtggggc tggcggtcat tctggacaca gacagtaaga gggattcaga 360 agcagecaga ggtecagtta aacceaecta caacagettt tteatetaet gcaaaggeee 420 ctgccacaag gtccagcctg gaaagctccg agttcagtgt ggcacctgca aacaagcaac 480 cctcaccttg gcccagggcc catcttgctg ggacgatgtc ttaattccaa accggatgag 540 tggtgagtgc cagtctccag actgccctgg aaccagagct gaatttttct ttaaatgtgg 600 agcacaccca acctcagaca aggacacgtc ggtagctttg aacctgatca ccagcaacag 660 gegeageate cettgeatag egtgeacaga tgtcaggage cetgteetgg tettecagtg 720 taaccaccgt cacgtgatct gtttggactg tttccacttg tattgtgtca caagactcaa 780 cgatcggcag tttgtccacg atgctcaact tggctactcc ctgccgtgtg tagctggctg 840 teccaaetee etgattaaag ageteeatea etteaggate ettggagaag ageagtacae 900 taggtaccag cagtatgggg ccgaggaatg cgtgctgcaa atgggaggtg tgctgtgccc 960 eegteetgge tgtggagetg gaetgetace tgaacaggge cagaggaaag teacetgega 1020 agggggcaac ggcctgggct gcgggtttgt tttctgccgg gactgtaagg aagcatacca 1080 tgaaggggat tgcgactcac tgctcgaacc ctcaggagcc acttctcagg cctacagggt 1140 ggacaaaaga geegetgage aagetegetg ggaggaggee tecaaggaaa ecatcaagaa 1200 gaccaccaag cettgteete getgeaaegt gecaattgaa aaaaaeggag gatgtatgea 1260 catgaagtgt cctcagcccc agtgcaagct ggagtggtgc tggaactgtg gctgtgagtg 1320 gaaccgagcc tgcatgggag atcactggtt tgacgtgtag agagagatgt cacttggccc 1380 tggacgcaca acctcaaggg aaactccgaa gattcctacc ttccttagcc atttcttctt 1440 ctcgatgcat ataagcacat aaatgcgcac acacaaacac aggctgcaga ttacagaagc 1500 ageceetaga teetttetag ggeaceeaca gaaaaceaca geaceegetg geeceagggg 1560 gaggaggcac tttcageete tggeteacte gaatgteaga gettagatga gggtgeacet 1620 ttggtttgga ttctgtagaa gccatgagtg aggtgggaag tgttttccag ggttgttgcc 1680 acgeeetggg taagtaacae etetgaggat teteagaage acaettgaga tetgaggaae 1740

getgetetea tgtagtaate atetatteee aaagggeeee etgeagtagt caaaactatt 1800 tgtttatccc cccaaatcct atctttacaa atggtgctga tgagattaca acccctctgt 1860 gtactaatca gettateaac caagtgagaa eetaggaaag etaattggat ggeagaetge 1920 ttaaatcgca gggaggactc agaagccaaa cctacttccg ttcgtttcat tatctgcaac 1980 tttagaaaga aatgatettt tttteeeet gaaaagataa caaagtetge aatttggttt 2040 ggagtattcc tactgcagcc tggaagttta gcttcactgt gaatttaaca gagaaagtgc 2100 ctataaaggg ggcgttttta agagacaatc ccatgatgct gcgccaatgc taacaacagg 2160 gtcaagaaac acaatgttta tagaaggagc atccctcgac catctgaatg agagtatgcc 2220 tgaccectte caccacaagt ggggacacet etgcatatet geteeeteet etgetgttaa 2280 geoccaggga geoccateca eccagtggte etacagacag ggeaatacae acacaccaag 2340 atageettea gateaacatg cateacaete aagtgttaat ettteaaggt tttetttet 2400 ttttcctgtt ttttatttgt tttgcttttg ctttttttt tttttttt ggtggtggtg 2460 gggctaccaa acttgaggcc tagagctaaa aatcatatag aaatgatgtt atcttgtggt 2520 gtgaggaaag gccagctggc ctaagttcac acttttgtcc cagtggccct agactccacc 2580 cagccagete ecaaaatgaa aagaccaeet gteaagcage agteaggagt etgatgteae 2640 ccatcactat ttttttcca tcattgtgct tgcctctgcc tccttccaca cccgtgtgac 2700 gtaategeat tgggaageea ggacaatgtt tgetgttetg etttgggtaa agggaeteee 2760 tgaagetetg tggeteteca gtatggteee tttteettee taacagatge atatgtttte 2820 ttcagaatac aatagtgatt cttaaaataa cccaaaagac aggcatccac agtgtgtgag 2880 catgaatcac agcotgoatt gtgtgagtgt gaatagtggg ataaaagtgg atgtcagaag 2940 agtggaaatc aaacctctgc aaagcaatct ttctctttct gtgaagtgta ttaagaaata 3000 cctgaagtct gtgtgtgtgg tggtacccag actgtcaatc aataaagacc cagactgtca 3060 atgaaaaaa aaaaaaaaa aaaaaaaaa aa 3092

<210> 18

<211> 3255

<212> DNA

<213> mouse

<400> 18

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaeeegee 120 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attetgacae cageatettg cageteaagg aagtggttge taagegacag ggggtteeag 240 ctgaccaget gegtgtgatt tttgeeggga aggagettee gaatcaeetg aeggtteaaa 300 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagtc 360 atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420 agtecaggag cttgacacga gtggacctga gcagecatac cctgccggtg gactctgtgg 480 ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540 ttaaacccac ctacaacagc tttttcatct actgcaaagg cccctgccac aaggtccagc 600 ctggaaatct ccgagttcag tgtggcacct gcaaacaagc aaccctcacc ttggcccagg 660 geocatettg etgggaegat gtettaatte caaaceggat gagtggtgag tgecagtete 720 cagactgccc tggaaccaga gctgaatttt tctttaaatg tggagcacac ccaacctcag 780 acaaggacac gtcggtagct ttgaacctga tcaccagcaa caggcgcagc atcccttgca 840 tagegtgeae agatgteagg agecetgtee tggtetteea gtgtaaceae egteaegtga 900 totgtttgga otgtttccac ttgtattgtg tcacaagact caacgatcgg cagtttgtcc 960 acgatgetea acttggetae teectgeegt gtgtagetgg etgteceaae teectgatta 1020 aagageteea teaetteagg ateettggag aagageagta caetaggtae cageagtatg 1080

```
gggccgagga atgcgtgctg caaatgggag gtgtgctgtg cccccgtcct ggctgtggag 1140
ctggactgct acctgaacag ggccagagga aagtcacctg cgaagggggc aacggcctgg 1200
gctgcgggtt tgttttctgc cgggactgta aggaagcata ccatgaaggg gattgcgact 1260
cactgetega acceteagga gecaettete aggeetacag ggtggacaaa agageegetg 1320
agcaageteg etgggaggag geetecaagg aaaccateaa gaagaceace aageettgte 1380
ctcgctgcaa cgtgccaatt gaaaaaacg gaggatgtat gcacatgaag tgtcctcagc 1440
cccagtgcaa gctggagtgg tgctggaact gtggctgtga gtggaaccga gcctgcatgg 1500
gagatcactg gtttgacgtg tagagagaga tgtcacttgg ccctggacgc acaacctcaa 1560
gggaaactcc gaagatteet acetteetta gecatttett ettetegatg catataagca 1620
cataaatgcg cacacacaaa cacaggctgc agattacaga agcagcccct agatcctttc 1680
tagggcaccc acagaaaacc acagcacccg ctggccccag ggggaggagg cactttcagc 1740
ctctggctca ctcgaatgtc agagcttaga tgagggtgca cctttggttt ggattctgta 1800
gaagccatga gtgaggtggg aagtgttttc cagggttgtt gccacgccct gggtaagtaa 1860
cacctetgag gattetcaga ageacacttg agatetgagg aacgetgete teatgtagta 1920
atcatctatt cccaaagggc cccctgcagt agtcaaaact atttgtttat ccccccaaat 1980
cctatcttta caaatggtgc tgatgagatt acaacccctc tgtgtactaa tcagcttatc 2040
aaccaagtga gaacctagga aagctaattg gatggcagac tgcttaaatc gcagggagga 2100
ctcagaagcc aaacctactt ccgttcgttt cattatctgc aactttagaa agaaatgatc 2160
tttttttccc cctgaaaaga taacaaagtc tgcaatttgg tttggagtat tcctactgca 2220
gcctggaagt ttagcttcac tgtgaattta acagagaaag tgcctataaa gggggcgttt 2280
ttaagagaca atcccatgat gctgcgccaa tgctaacaac agggtcaaga aacacaatgt 2340
ttatagaagg ageatecete gaccatetga atgagagtat geetgaeece ttecaccaca 2400
agtggggaca cototgcata totgotocot cototgotgt taagccccag ggagccccat 2460
ccacccagtg gtcctacaga cagggcaata cacacacc aagatagcct tcagatcaac 2520
atgcatcaca ctcaagtgtt aatctttcaa ggttttcttt tctttttcct gttttttatt 2580
tgttttgctt ttgctttttt tttttttt tttggtggtg gtggggctac caaacttgag 2640
geetagaget aaaaateata tagaaatgat gttatettgt ggtgtgagga aaggeeaget 2700
ggcctaagtt cacacttttg tcccagtggc cctagactcc acccagccag ctcccaaaat 2760
gaaaagacca cctgtcaagc agcagtcagg agtctgatgt cacccatcac tattttttt 2820
ccatcattgt gcttgcctct gcctccttcc acacccgtgt gacgtaatcg cattgggaag 2880
ccaggacaat gtttgctgtt ctgctttggg taaagggact ccctgaagct ctgtggctct 2940
ccagtatggt cccttttcct tcctaacaga tgcatatgtt ttcttcagaa tacaatagtg 3000
attettaaaa taacccaaaa gacaggcate cacagtgtgt gagcatgaat cacageetge 3060
attgtgtgag tgtgaatagt gggataaaag tggatgtcag aagagtggaa atcaaacctc 3120
tgcaaagcaa tctttctctt tctgtgaagt gtattaagaa atacctgaag tctgtgtgtg 3180
tggtggtacc cagactgtca atcaataaag acccagactg tcaatgaaaa aaaaaaaaa 3240
aaaaaaaa aaaaa
                                                                  3255
```

<210> 19

<211> 3255

<212> DNA

<213> mouse

<400> 19

ctcagcgagg ggaagggga ggaggcctgg atgactaaac ctgacagaa cgctggtggg 60 aggctcggc gggcgccagt gcccgcgtag gtccttctcg acccgcagcc accacccgcc 120 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttcca gtggaggtcg 180 attctgacac cagcatcttg cagctcaagg aagtggttgc taagcgacag ggggttccag 240

ctgaccagct	gcgtgtgatt	tttaccaaa	addadettee	gaatcacctg	acouttosas	300
	ggaacaacag					
	tgcatctgga					
	cttgacacga					
	cattctggac		•			
	ctacaacagc					
	ccgagttcag					
	ctgggacgat					
	tggaaccaga					
	gtcggtagct					
	agatgtcagg		_	7 7 7		
	ctgtttccac					
	acttggctac					
	tcacttcagg					
-	atgcgtgctg					
	acctgaacag					
	tgttttctgc					
	accctcagga					
	ctgggaggag					
	cgtgccaatt					
	gctggagtgg					
	gtttgacgtg					
	gaagattcct					
	cacacacaaa					
	acagaaaacc					
	ctcgaatgtc					
	gtgaggtggg					
	gattctcaga					
	cccaaagggc					
	caaatggtgc					
	gaacctagga					
	aaacctactt					
	cctgaaaaga					
	ttagcttcac					
	atcccatgat					
	agcatccctc					
	cctctgcata					
	gtcctacaga					
	ctcaagtgtt				=	
	ttgcttttt					
	aaaaatcata					
	cacacttttg					
	cctgtcaagc					
	gcttgcctct					
	gtttgctgtt					
ccagtatggt						7000
	ccctttcct					
	cccttttcct taacccaaaa tgtgaatagt	gacaggcatc	cacagtgtgt	gagcatgaat	cacagcctgc	3060

<210> 20 <211> 3255 <212> DNA

<213> mouse

<400> 20

ctcagcgagg ggaaggggga ggaggcctgg atgactaaac ctgacagaaa cgctggtggg 60 aggeteggge gggegeeagt geeegegtag gteetteteg accegeagee accaeeegee 120 eggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180 attctgacac cagcatcttg cagctcaagg aagtggttgc taagcgacag ggggttccag 240 ctgaccagct gcgtgtgatt tttgccggga aggagcttcc gaatcacctg acggttcaaa 300 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagtc 360 atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420 agtecaggag ettgacaega gtggacetga geagecatae eetgeeggtg gactetgtgg 480 ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540 ttaaacccac ctacaacagc tttttcatct actgcaaagg cccctgccac aaggtccagc 600 ctggaaagct ccgagttcag tgtggcacct gcaaacaagc aaccetcacc ttggcccagg 660 geceatettg etgggaegat gtettaatte caaaceggat gagtggtgag tgecagtete 720 cagactgccc tggaaccaga gctgaatttt tctttaaatg tggagcacac ccaacctcag 780 acaaggacac gtcggtagct ttgaacctga tcaccagcaa caggcgcagc atcccttgca 840 tagegtgeac agatgteagg agecetgtee tggtetteea gtgtaaceae egteaegtga 900 totgtttgga otgtttccac ttgtattgtg tcacaagact caacgatcgg cagtttgtcc 960 acgatgetca acttggctac tecetgeegt gtgtagetgg etgteecaac tecetgatta 1020 aagageteea teaetteagg ateettggag aagageagta caetaggtae cageagtatg 1080 gggccgagga atgcgtgctg caaatgggag gtgtgctgtg cccccgtcct ggctgtggag 1140 ctggactgct acctgaacag ggccagagga aagtcacctg cgaagggggc aacggcctgg 1200 gctgcgggtt tgttttctgc cgggactgta aggaagcata ccatgaaggg gattgcgact 1260 cactgetega acceteagga gecaettete aggeetacag ggtggacaaa agageegetg 1320 agcaageteg etgggaggag geetecaagg aaaceateaa gaagaceace aageettgte 1380 ctcgctgcaa cgtgccaatt gaaaaaaacg gaggatgtat gcacatgaag tgtcctcagc 1440 cccagtgcaa gctggagtgg tgctggaact gtggctgtga gtagaaccga gcctgcatgg 1500 gagatcactg gtttgacgtg tagagagag tgtcacttgg ccctggacgc acaacctcaa 1560 gggaaactec gaagatteet acetteetta gecatttett ettetegatg catataagea 1620 cataaatgcg cacacacaaa cacaggctgc agattacaga agcagcccct agatcctttc 1680 tagggcaccc acagaaaacc acagcacccg ctggccccag ggggaggagg cactttcagc 1740 ctctggctca ctcgaatgtc agagcttaga tgagggtgca cctttggttt ggattctgta 1800 gaagccatga gtgaggtggg aagtgttttc cagggttgtt gccacgccct gggtaagtaa 1860 cacctetgag gatteteaga ageacaettg agatetgagg aacgetgete teatgtagta 1920 atcatctatt cccaaagggc cccctgcagt agtcaaaact atttgtttat ccccccaaat 1980 cctatettta caaatggtge tgatgagatt acaaccecte tgtgtactaa teagettate 2040 aaccaagtga gaacctagga aagctaattg gatggcagac tgcttaaatc gcagggagga 2100 ctcagaagcc aaacctactt ccgttcgttt cattatctgc aactttagaa agaaatgatc 2160 tttttttccc cctgaaaaga taacaaagtc tgcaatttgg tttggagtat tcctactgca 2220 gcctggaagt ttagcttcac tgtgaattta acagagaaag tgcctataaa gggggcgttt 2280

ttaagagaca atcccatgat gctgcgccaa tgctaacaac agggtcaaga aacacaatgt 2340 ttatagaagg agcateeete gaccatetga atgagagtat geetgaeeee ttecaccaca 2400 agtggggaca cetetgeata tetgeteest estetgetgt taageeccag ggageeccat 2460 ccacccagtg gtcctacaga cagggcaata cacacacc aagatagcct tcagatcaac 2520 atgcatcaca ctcaagtgtt aatctttcaa ggttttcttt tctttttcct gttttttatt 2580 tgttttgctt ttgctttttt tttttttt tttggtggtg gtggggctac caaacttgag 2640 gcctagagct aaaaatcata tagaaatgat gttatcttgt ggtgtgagga aaggccagct 2700 ggcctaagtt cacacttttg tcccagtggc cctagactcc acccagccag ctcccaaaat 2760 gaaaagacca cctgtcaagc agcagtcagg agtctgatgt cacccatcac tattttttt 2820 ccatcattgt gcttgcctct gcctccttcc acacccgtgt gacgtaatcg cattgggaag 2880 ccaggacaat gtttgctgtt ctgctttggg taaagggact ccctgaagct ctgtggctct 2940 ccagtatggt cccttttcct tcctaacaga tgcatatgtt ttcttcagaa tacaatagtg 3000 attettaaaa taacccaaaa gacaggcate cacagtgtgt gagcatgaat cacageetge 3060 attgtgtgag tgtgaatagt gggataaaag tggatgtcag aagagtggaa atcaaacctc 3120 tgcaaagcaa tetttetett tetgtgaagt gtattaagaa atacetgaag tetgtgtgtg 3180 tggtggtacc cagactgtca atcaataaag acccagactg tcaatgaaaa aaaaaaaaa 3240 aaaaaaaaa aaaaa

<210> 21

<211> 105

<212> PRT

<213> mouse

<400> 21

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Leu Asn Pro Pro Thr Thr Ala
50 55 60

Phe Ser Ser Thr Ala Lys Ala Pro Ala Thr Arg Ser Ser Leu Glu Ser 65 70 75 80

Ser Glu Phe Ser Val Ala Pro Ala Asn Lys Gln Pro Ser Pro Trp Pro 85 90 95

25

Arg Ala His Leu Ala Gly Thr Met Ser 100 105

<210> 22

<211> 344

<212> PRT

<213> mouse

<400> 22

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Gly Pro Ser Cys Trp Asp Asp 50 55 60

Val Leu Ile Pro Asn Arg Met Ser Gly Glu Cys Gln Ser Pro Asp Cys 65 70 75 80

Pro Gly Thr Arg Ala Glu Phe Phe Phe Lys Cys Gly Ala His Pro Thr 85 90 95

Ser Asp Lys Asp Thr Ser Val Ala Leu Asn Leu Ile Thr Ser Asn Arg

Arg Ser Ile Pro Cys Ile Ala Cys Thr Asp Val Arg Ser Pro Val Leu 115 120 125

Val Phe Gln Cys Asn His Arg His Val Ile Cys Leu Asp Cys Phe His 130 135 140

Gln Leu Gly Tyr Ser Leu Pro Cys Val Ala Gly Cys Pro Asn Ser Leu 165 170 175

Ile Lys Glu Leu His His Phe Arg Ile Leu Gly Glu Glu Gln Tyr Thr 180 185 190

Arg Tyr Gln Gln Tyr Gly Ala Glu Glu Cys Val Leu Gln Met Gly Gly
195 200 205

Val Leu Cys Pro Arg Pro Gly Cys Gly Ala Gly Leu Leu Pro Glu Gln 210 215 220

Gly Gln Arg Lys Val Thr Cys Glu Gly Gly Asn Gly Leu Gly Cys Gly

225 230 235 240

Phe Val Phe Cys Arg Asp Cys Lys Glu Ala Tyr His Glu Gly Asp Cys 245 250 255

Asp Ser Leu Leu Glu Pro Ser Gly Ala Thr Ser Gln Ala Tyr Arg Val 260 265 270

Asp Lys Arg Ala Ala Glu Gln Ala Arg Trp Glu Glu Ala Ser Lys Glu 275 280 285

Thr Ile Lys Lys Thr Thr Lys Pro Cys Pro Arg Cys Asn Val Pro Ile
290 295 300

Glu Lys Asn Gly Gly Cys Met His Met Lys Cys Pro Gln Pro Gln Cys 305 310 315

Lys Leu Glu Trp Cys Trp Asn Cys Gly Cys Glu Trp Asn Arg Ala Cys
325
330
335

Met Gly Asp His Trp Phe Asp Val 340

<210> 23

<211> 63

<212> PRT

<213> mouse

<400> 23

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu
1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys

Glu Leu Pro Asn His Leu Thr Val Gln Leu Ala Val Pro Thr Pro
50 55 60

<210> 24

<211> 153

<212> PRT

<213> mouse

<400> 24

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu
1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Gly Pro Ile Leu Leu Gly Arg

Cys Leu Asn Ser Lys Pro Asp Glu Trp 145 150

<210> 25

<211> 194

<212> PRT

<213> mouse

<400> 25

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln

50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130 135 140

Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly Lys
145 150 155 160

Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala 165 170 175

Gln Asn Phe Ser Leu Asn Val Glu His Thr Gln Pro Gln Thr Arg Thr 180 185 190

Arg Arg

<210> 26

<211> 183

<212> PRT

<213> mouse

<400> 26

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile 85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu 100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130 135 140

Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly Lys 145 150 155 160

Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala 165 170 175

Gln Leu Ala Val Pro Thr Pro 180

<210> 27

<211> 296

<212> PRT

<213> mouse

<400> 27

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu
1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu 100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys

Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130 135 140

Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala 165 170 175

Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met Ser 180 185 190

Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe Phe 195 200 205

Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val Ala 210 225 220

Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala Cys
225 230 235 240

Thr Asp Val Arg Ser Pro Val Leu Val Phe Gln Cys Asn His Arg His 245 250 255

Val Ile Cys Leu Asp Cys Phe His Leu Tyr Cys Val Thr Arg Leu Asn 260 265 270

Asp Arg Gln Phe Val His Asp Ala Gln Leu Gly Tyr Ser Leu Pro Cys 275 280 285

Val Val Cys Phe Leu Pro Gly Leu 290 295

<210> 28

<211> 37

<212> PRT

<213> mouse

<400> 28

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Arg Gly Ser Ser 35

<210> 29

<211> 53

<212> PRT

<213> mouse

<400> 29

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Ile Thr 50

<210> 30

<211> 77

<212> PRT

<213> mouse

<400> 30

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Glu Lys Ser 65 70 75

<210> 31

<211> 14

<212> PRT

<213> mouse

<400> 31

Met Ile Val Thr Val Thr Trp Asn Asn Arg Val Leu Tyr Thr
1 5 10

<210> 32

<211> 464

<212> PRT

<213> mouse

<400> 32

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile 85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130 135 140

Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met Ser Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe Phe Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val Ala Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala Cys Thr Asp Val Arg Ser Pro Val Leu Val Phe Gln Cys Asn His Arg His Val Ile Cys Leu Asp Cys Phe His Leu Tyr Cys Val Thr Arg Leu Asn Asp Arg Gln Phe Val His Asp Ala Gln Leu Gly Tyr Ser Leu Pro Cys Val Ala Gly Cys Pro Asn Ser Leu Ile Lys Glu Leu His His Phe Arg Ile Leu Gly Glu Glu Gln Tyr Thr Arg Tyr Gln Gln Tyr Gly Ala Glu Glu Cys Val Leu Gln Met Gly Gly Val Leu Cys Pro Arg Pro Gly Cys Gly Ala Gly Leu Pro Glu Gln Gly Gln Arg Lys Val Thr Cys Glu Gly Gly Asn Gly Leu Gly Cys Gly Phe Val Phe Cys Arg Asp Cys Lys Glu Ala Tyr His Glu Gly Asp Cys Asp Ser Leu Leu Glu Pro Ser Gly Ala Thr Ser Gln Ala Tyr Arg Val Asp Lys Arg Ala Ala Glu Gln Ala Arg Trp Glu Glu Ala Ser Lys Glu Thr Ile Lys Lys Thr Thr Lys Pro

Cys Pro Arg Cys Asn Val Pro Ile Glu Lys Asn Gly Gly Cys Met His
420 425 430

Met Lys Cys Pro Gln Pro Gln Cys Lys Leu Glu Trp Cys Trp Asn Cys
435
440
445

Gly Cys Glu Trp Asn Arg Ala Cys Met Gly Asp His Trp Phe Asp Val 450 455 460

<210> 33

<211> 464

<212> PRT

<213> mouse

<400> 33

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu
1 5 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile 85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130

Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly Lys 145 150 155

Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met Ser Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe Phe Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val Ala Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala Cys Thr Asp Val Arg Ser Pro Val Leu Val Phe Gln Cys Asn His Arg His Val Ile Cys Leu Asp Cys Phe His Leu Tyr Cys Val Thr Arg Leu Asn Asp Arg Gln Phe Val His Asp Ala Gln Leu Gly Tyr Ser Leu Pro Cys Val Ala Gly Cys Pro Asn Ser Leu Ile Lys Glu Leu His His Phe Arg Ile Leu Gly Glu Glu Gln Tyr Thr Arg Tyr Gln Gln Tyr Gly Ala Glu Glu Cys Val Leu Gln Met Gly Gly Val Leu Cys Pro Arg Pro Gly Cys Gly Ala Gly Leu Leu Pro Glu Gln Gly Gln Arg Lys Val Thr Cys Glu Gly Gly Asn Gly Leu Gly Cys Gly Phe Val Phe Cys Arg Asp Cys Lys Glu Ala Tyr His Glu Gly Asp Cys Asp Ser Leu Leu Glu Pro Ser Gly Ala Thr Ser Gln Ala Tyr Arg Val Asp Lys Arg Ala Ala Glu Gln Ala Arg Trp Glu Glu Ala Ser Lys Glu Thr Ile Lys Lys Thr Asn Lys Pro

Cys Pro Arg Cys Asn Val Pro Ile Glu Lys Asn Gly Gly Cys Met His
420 425 430

Met Lys Cys Pro Gln Pro Gln Cys Lys Leu Glu Trp Cys Trp Asn Cys 435

Gly Cys Glu Trp Asn Arg Ala Cys Met Gly Asp His Trp Phe Asp Val 450 455 460

<210> 34

<211> 451

<212> PRT

<213> mouse

<400> 34

Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu

1 10 15

Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
20 25 30

Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
35 40 45

Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln 50 55 60

Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
65 70 75 80

Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
85 90 95

Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
100 105 110

Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
115 120 125

Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser 130 135 140

Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly Lys

145					150					155					160
Leu	Arg	Val	Gln	Cys 165	Gly	Thr	Суз	Lys	Gln 170	Ala	Thr	Leu	Thr	Leu 175	Ala
Gln	Gly	Pro	Ser 180	Cys	Trp	Asp	Asp	Val 185	Leu	Ile	Pro	Asn	Arg 190	Met	Se
Gly	Glu	Cys 195	Gln	Ser	Pro	Asp	Cys 200	Pro	Gly	Thr	Arg	Ala 205	Glu	Phe	Phe
Phe	Lys 210	Cys	Gly	λla	His	Pro 215	Thr	Ser	Asp	Lys	Asp 220	Thr	Ser	Val	Ala
Leu 225	Asn	Leu	Ile	Thr	Ser 230	Asn	Arg	Arg	Ser	Ile 235	Pro	Cys	Ile	λla	Cys
Thr	Asp	Val	Arg	Ser 245	Pro	Val	Leu	Val	Phe 250	Gln	Cys	Asn	His	Arg 255	His
Val	Ile	Cys	Leu 260	Asp	Суз	Phe	His	Leu 265	Tyr	Суз	Val	Thr	Arg 270	Leu	Ası
Asp	Arg	Gln 275	Phe	Val	His	yab	Ala 280	Gln	Leu	Gly	Туг	Ser 285	Leu	Pro	Суг
Val	Ala 290	Gly	Cys	Pro	Asn	Ser 295	Leu	Ile	Lys	Glu	Leu 300	His	His	Phe	Arg
Ile 305	Leu	Gly	Glu	Glu	Gln 310	Tyr	Thr	Arg	Tyr	Gln 315	Gln	Tyr	Gly	Ala	Glu 320
Glu	Cys	Val	Leu	Gln 325	Met	Gly	Gly	Val	Leu 330	Cys	Pro	Arg	Pro	Gly 335	Суя
Gly	Ala	Gly	Leu 340	Leu	Pro	Glu	Gln	Gly 345	Gln	Arg	Lys	Val	Thr 350	Cys	Glu
Gly	Gly	Asn 355	Gly	Leu	Gly	Cys	Gly 360	Phe	Val	Phe	Cys	Arg 365	Asp	Cys	Lys
Glu	Ala 370	Tyr	His	Glu	Gly	Asp 375	Сув	Asp	Ser	Leu	Leu 380	Glu	Pro	Ser	Gly
Ala 385	Thr	Ser	Gln	Ala	Tyr 390	Arg	Val	Asp	Lys	Arg 395	Ala	Ala	Glu	Gln	Ala 400
Arg	Trp	Glu	Glu	Ala	Ser	Lys	Glu	Thr	Ile	Lvs	Lvs	ጥክ _ፓ	ጥኮተ	Lve	Pro

405 410 415

Cys Pro Arg Cys Asn Val Pro Ile Glu Lys Asn Gly Gly Cys Met His
420 425 430

Met Lys Cys Pro Gln Pro Gln Cys Lys Leu Glu Trp Cys Trp Asn Cys 435

Gly Cys Glu 450